



Does executive functioning and attention predict social participation of individuals with severe ABI ?

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Background

- An important aspect of neurorehabilitation is assessment of effectiveness and success of rehabilitation goals. Individuals with acquired brain injuries (ABI) have considerable variability in life roles and functional activities they seek to resume post-injury. Research has shown goal attainment scaling to be useful in developing individual goals and assessment of outcome measures related to daily functional activities.
- Neuropsychological measures of executive functioning have been used to predict functional outcomes. Specifically, executive functioning is strongly related to functional outcomes, productivity, and community reintegration of individuals with ABI during the first year post-injury. Additionally, attention and concentration deficits are significantly associated with participation outcome for individuals with ABI living in the community. These findings are important given that individuals who perform well on these domains may be able to compensate for other deficits by using compensatory strategies in the community.

Study Aim

To extend on past research by exploring how executive functioning and attention relate to social participation and adjustment in a post-acute rehabilitation setting.

Method and Participants

Cross-sectional data was collected from a longitudinal dataset at Bancroft NeuroRehab, a post-acute, community based, day-treatment brain rehabilitation program. Individuals with moderate or severe acquired brain injuries ABI (N = 15) who were engaged in a long-term rehabilitative program at Bancroft NeuroRehabilitation. Data included:

1. Descriptive variables

- Age
- Education
- Ethnicity
- Sex
- Time since injury

2. Outcome measures

- Neuropsychological Assessment Battery (NAB) Screening Module-total scores per domain
- Mayo-Portland Adaptability Inventory (MPAI-4)- total scores per domain
 - Abilities
 - Adjustment
 - Participation

Analyses

****Please note that these analyses, participants, and results sections depict more recent findings that are different from those stated in the abstract****

Bivariate correlations and a multiple regression was conducted to predict social participation based on neuropsychological performance.

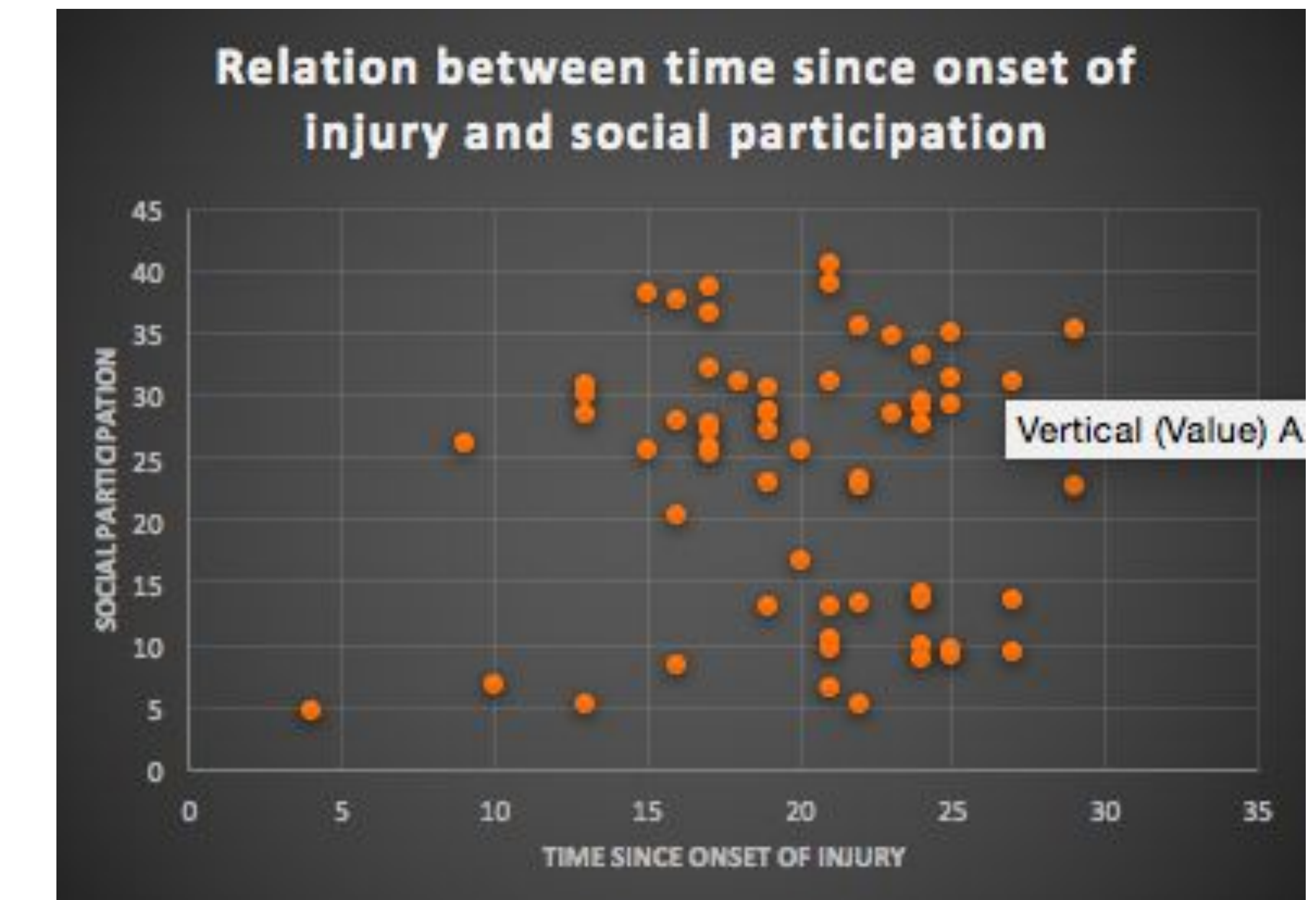
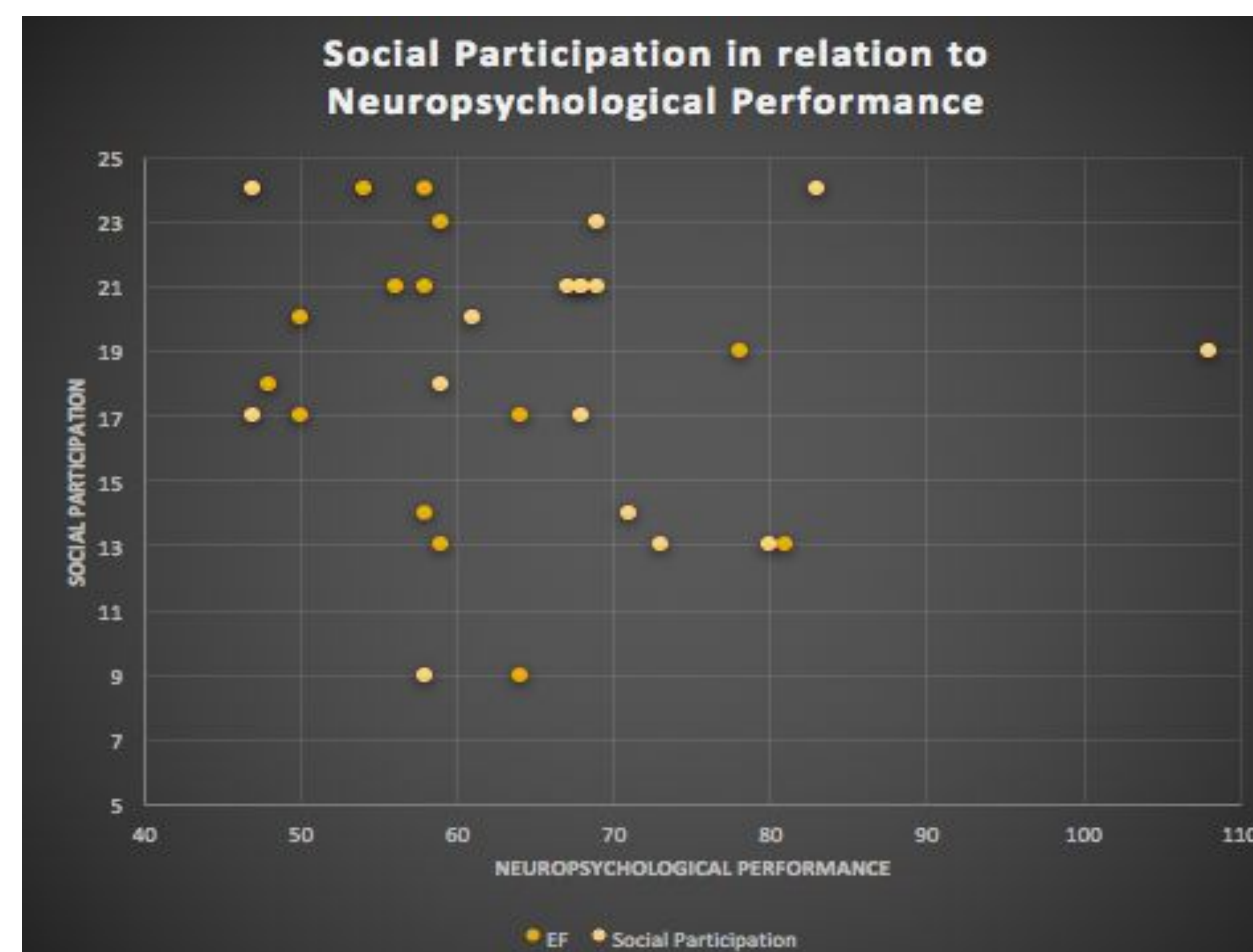
Demographics

	Mean	SD	Minimum	Maximum
Age	48.89	10.6	25.01	72.11
Years Since Onset	23.46	10.47	4.65	40.57
Years Since Admission to Bancroft	11.21	7.69	0.04	25.32

	Percentage
Ethnicity (% Caucasian)	84
Sex (% Female)	60

Results

- A multiple regression was conducted to predict social participation based on neuropsychological performance. The new regression analyses indicated no prediction of social participation from executive functioning performance, when controlling for time since injury, $F(2, 9) = 0.56, p = .59$.
- Similarly, performance on an attention task did not predict social participation controlling for time since injury, $F(2, 9) = 1.02, p = .40$.
- Time since injury was not associated with social participation ($p=0.44$).



Conclusions

- Participants at post-acute stages of ABI who have higher executive functioning and attention may be more likely to have higher social participation in a neurorehabilitation facility, when including a larger sample size.
- Individuals who have higher order functioning (i.e., plan, prioritize, multitask, make decisions) may be able to attend efficiently to stimuli and may have higher likelihood of being more engaged in activities that may be indicative of higher quality of life post-injury, although this was not supported by our findings on 15 individuals.

Limitations and Future Research

- A small sample size and a number of comorbidities were not taken into account in these analyses and may have resulted in lack of power in detecting significant relationships in the variables of interest. Given the vast research and clinical evidence highlighting the relationship between executive functioning and social participation, among other community integration and rehabilitation outcomes, it is likely that a larger sample size in this setting would have replicated these findings.
- Future research should investigate if specific neuropsychological assessments capture other measures relevant to rehabilitation and every day functioning for individuals with severe ABI.
- Another area of future research could explore an outpatient post-acute ABI population longitudinally to see predictive role of EF on social participation, adjustment, and abilities.

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